

Application/Control No.: 10/824,389
Examiner: PRESTON, ERIK D

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REMARKS

Applicant has amended the claims. Specifically, Applicant has amended claim 1 to recite that the induction core extensions are an integrally formed part of the single magnetic core.

The Examiner has rejected claims 1, 5, 6, 10, & 12 under 35 U.S.C. §102(b) as being anticipated by Esswein (U.S. Patent No. 5,327,032, herein Esswein).

Claim 1, as amended, points out elements not found in Esswein. Specifically, amended claim 1 points out that the two opposing extensions are an integrally formed part of the single body magnetic core. Additionally, amended claim 1 points out the existence of magnetic separation notches across the entire lateral surface of the induction core.

To the contrary, Esswein fails to point out each and every element of amended claim 1. Specifically, Esswein teaches an electrically-energized rotary actuator which includes an annular stator ring (10) having a plurality of slot-like magnetic flux obstructions spaced around the ring of circumference (22, 24, 26 or 22', 24', 26'). Furthermore, the induction core taught in Esswein comprises two separate rods (30) extending radially outward from the stator ring (10) along diametrical line (32). Therefore, it is clear that the induction core as pointed out in Esswein is not provided in a single piece but in two separate parts.

Additionally, the axial slots extend along the full axial length of the ring, except for a short un-slotted area at mid point along the length of the ring (10) as described at col. 3 lines 38-41, illustrated in Figure 1.

The un-slotted area on the axial length of the ring is for the purposes of preserving the structural integrity of the ring and facilitating handling during the encapsulation process. Col. 3 lines 47-50.

One of the problems encountered in the field of the invention is how to maintain the structural integrity of the ring provided with slots or grooves on its lateral surface. In Esswein the problem has been solved by providing an un-slotted area. However, this un-slotted has drawbacks when considering magnetic flux obstructions. In the present invention, the single piece induction core solves the problem of the structural integrity of the stator without providing stratagems such as providing an un-

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slotted area, as in the Esswein patent. This allows for the placement of magnetic separation notches around the entirety of the surface of the induction core. As a result the present invention teaches a better mitigation of magnetic flux obstructions.

As such, the cited prior art fails to teach all the elements of the rejected claim 1. Claims 5, 6, 10, and 12 are all dependent on claim 1. Therefore, the cited claims are not anticipated by the prior art reference.

Based on the above, Applicant respectfully submits that the claims of the present invention are in proper form for allowance.

The Examiner has rejected claims 7, 11, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Esswein (U.S. Patent No. 5,327,032).

Amended claim 1 teaches, among other elements, a single piece induction core with two opposing extensions that are an integrally formed part of the single body magnetic core and the presence of magnetic separation notches on the entire lateral surface of the induction core. These two elements distinguish the present invention from Esswein.

The use of a single piece induction core is not, as the Examiner suggested, a merely obvious engineering choice. The single piece induction core allows for greater structural integrity of the induction core, thereby allowing notches to progress around the lateral surface of said induction core. This in turn allows for a greater management of the magnetic flux obstructions and ultimately, a more efficient device.

It would not have been merely an obvious engineering choice to solve the issue of structural integrity while at the same time enhancing the number and position of magnetic separation notches on the lateral surface of the induction core. No obvious modification of the cited prior art would teach the present invention. Merely increasing the number of notches in the cited prior art would only further weaken the structural integrity of the prior art induction core. There is nothing in the prior art that suggests the addition of more magnetic separation notches to mitigate magnetic flux obstructions. Even if there were suggestions to that effect, which Applicant does not concede, they fail to suggest producing the induction core as a single piece to provide the structural stability necessary to add additional magnetic separation notches.

Claims 4, 11, and 14 are dependent on claim 1. As argued previously, claim 1 can not be obvious in light of the cited prior art patent. Therefore, any claim that depends from claim 1 can not be obvious in light of the cited prior art patent.

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Claims 3 and 4 have been rejected under 356 U.S.C. §103(a) as being unpatentable over Esswein (U.S. 5,327,032) in view of Horst (EP 0676853, herein '853 patent).

Applicant notes that claim 3 is dependent on claim 1, and claim 4 is dependent on claim 3. Applicant has previously stated why claim 1 is non-obvious in light of the cited prior art. Combining the '032 patent with the '853 patent only teaches a motor with four equidistant extensions. The Applicant notes that the motor taught in such a combination fails to teach a single piece induction core with integrally formed extensions or equidistant placement of magnetic separation notches around the entirety of the lateral surface of said induction core. Therefore, the combined prior art fails to teach the entirety of the present invention. Claim 4 can not be obvious in light of the cited prior art, for the same reason as claim 3.

Claims 8 and 9 have been rejected under 356 U.S.C. §103(a) as being unpatentable over Esswein (U.S. 5,327,032) in view of Mavidia et al. (EP 0342733, herein '733 patent).

Applicant notes that claim 8 and 9 are dependent on claim 1. Applicant has previously stated why claim 1 is non-obvious in light of the cited prior art. Combining the '032 patent with the '733 patent only teaches a motor, found in the '032 patent, with the addition of a hall-effect sensor adapted to control the position of the rotor. The Applicant notes that the motor taught in such a combination fails to teach a single piece induction core, or equidistant placement of magnetic separation notches around the entirety of the lateral surface of said induction core. Therefore, the combined prior art fails to teach the entirety of the present invention.

Claim 13 has been rejected under 356 U.S.C. §103(a) as being unpatentable over Esswein (U.S. 5,327,032) in view of Mavidia et al. (EP 0342733, herein '733 patent) in further view of Mayes et al. (EP 0892490, herein '490).

Applicant notes that claim 13 is dependent on claim 1. Applicant has previously stated why claim 1 is non-obvious in light of the cited prior art. Combining the '032 patent with the '733 and '490 patents only teach a motor, as described in the '032 patent, with the Hall-effect sensor of the '733 patent, and an optical sensor found in '490 patent. The Applicant notes that the motor taught in such a combination fails to teach a single piece induction core, or equidistant placement of notches around the

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entirety of the lateral surface of said induction core. Therefore, the combined prior art fails to teach the entirety of the present invention.

Based on the above, Applicants respectfully submit that the claims of the present invention are in proper form for allowance. Favorable consideration and early allowance are therefore respectfully requested and earnestly solicited.

Respectfully Submitted;



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